


Addressing the Needs of Adolescents With Autism Spectrum Disorder: Considerations and Complexities for High School Interventions

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Abstract

The outcomes of students with autism spectrum disorder (ASD) are driving the field to address how secondary education might be optimally designed and delivered. We conducted 28 focus groups across four states to explore the contexts, considerations, and complexities associated with delivering and combining evidence-based interventions to meet the needs of adolescents with ASD from the vantage point of 152 practitioners, parents, and other key stakeholders. Participants emphasized the inadequacy of prevailing intervention approaches in secondary schools, underscored the importance of attending to feasibility and alignment with the diverse needs of students with ASD, and stressed the need for broader awareness and training efforts surrounding autism. We offer recommendations for designing comprehensive interventions and incorporating stakeholder feedback into such undertakings.

Equipping students with disabilities for postsecondary education and meaningful employment stands as a central purpose of special education and transition services (i.e., Individuals With Disabilities Education Act, 2006; see 34 C.F.R. § 300). Indeed, the outcomes these students attain in the early years after leaving high school serve as a leading measure of the effectiveness of the educational services and supports provided during secondary school. As students served within special education under the autism label graduate, however, almost every available metric suggests many leave school without the skills, experiences, supports, and linkages that will prepare them well for college and future careers (e.g., Carter, Austin, & Trainor, 2012; Shattuck et al., 2012). For example, up to 4 years after leaving high school, only 57% of young adults with autism spectrum disorder (ASD) have ever enrolled in any type of

postsecondary education, only 47% are currently employed, only 11% live independently, and just 59% see friends outside of work or school at least weekly (Newman, Wagner, Cameto, & Knokey, 2009). Reflection on these post-school outcomes is driving the field to consider how secondary and transition services might be optimally designed and delivered to meet the needs of these adolescents.

Accompanying these calls has been growing recognition of the need for comprehensive

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interventions that address the breadth of educational and transition needs experienced by students with disabilities (Handleman & Harris, 2006; Odom, Boyd, Hall, & Hume, 2010). Although social-related challenges are among the defining features of ASD, the needs of adolescents with ASD are often more global as they prepare to pursue goals in the areas of postsecondary education, careers, community participation, and independent living. In other words, interventions addressing just one dimension of students' lives may be far too narrow to produce substantial improvements in the postschool outcomes of graduates with ASD (Carter, Brock, & Trainor, 2014). Although literature is replete with evaluations of interventions addressing individual educational domains (e.g., social interactions, reading, self-management) for elementary and preschool students (Carter, Sisco, Chung, & Stanton-Chapman, 2010; El Zein, Solis, Vaughn, & McCulley, 2013), far less attention has focused on adolescents. For example, a recent meta-analysis by de Bruin, Deppeler, Moore, and Diamond (2013) identified just three areas (e.g., antecedent-, consequence-, and video-based interventions) in which strong evidence of intervention efficacy has been found for secondary students with ASD. In addition, a recent review of literature published from 1990 to 2011 found three times more intervention studies conducted with participants with ASD ages 6 to 14 than ages 15 to 22 (Wong et al., 2013). Moreover, efforts to integrate individual interventions into comprehensive and coordinated packages at the secondary level have been entirely absent (see review by Odom, Collett-Klingenberg, Rogers, & Hatton, 2010).

When crafting such comprehensive school-based interventions, it is critical they be designed in ways that are feasible and acceptable within typical high schools. Interventions with strong evidence of efficacy—but limited social validity—are likely to be delivered with poor fidelity (if even delivered at all), especially as interventions gain more complexity and engage more educational stakeholders. Indeed the field has long lamented the “research-to-practice gap” and has highlighted

inattention to the social validity of intervention goals and procedures as a prominent contributing factor (e.g., Carnine, 1997). Yet a comprehensive review of the literature (using ERIC, Academic Search Complete, and PsycINFO databases) yielded no data on efforts to engage critical stakeholders in informing the design and delivery of comprehensive intervention efforts for secondary students with ASD.

When crafting such comprehensive school-based interventions, it is critical they be designed in ways that are feasible and acceptable within typical high schools.

The Center on Secondary Education for Students With Autism Spectrum Disorder (CSESA) is a 5-year project funded to develop, refine, and rigorously evaluate a comprehensive intervention package aimed at improving the in- and postschool outcomes for youth with ASD. Our model combines five individual intervention components (i.e., evidence-based foundations, social competence, academics, transition and families, and adaptive behavior), each of which has strong initial research support but has not typically been delivered in tandem with the others (see Odom, Duda, Kucharczyk, Cox, & Stable, 2014, for a fuller description of the proposed model and conceptual framework). The foundational component involves professional development to improve the quality of program features for students with ASD (National Professional Development Center on ASD, 2011), establishment of meaningful goals, and alignment of evidence-based practices with the individualized needs. The social competence component incorporates both peer-mediated support interventions to foster social connections (Carter, Moss, Hoffman, Chung, & Sisco, 2011) and group-based training to teach targeted social skills (Schmidt, Stichter, Lierheimer, McGhee, & O'Connor, 2011; Carter, Commons, et al., 2014). The academic component addresses literacy comprehension either using a cooperative approach in core content areas or by

making adaptations of the text and providing systematic instruction (see Fleury et al., 2014). The transition-and-families component incorporates (a) student-level efforts aimed at promoting student-led transition planning and work-based learning, (b) family-level strategies aimed at equipping parents with knowledge about resources and problem solving related to transition, and (c) school- and community-level strategies aimed at mapping existing transition-related resources and opportunities (Test, Smith, & Carter, 2014). Finally, the adaptive behavior component focuses on planning and instruction related to promoting independence and self-management. Within these five components—each of which is elaborated upon in a special issue of *Remedial and Special Education* (Volume 35, Issue 2)—we intentionally incorporate intervention variations to address the needs of adolescents along the entire autism spectrum.

In the first phase of our project, we developed initial iterations of each of these components drawing upon the extant literature and our own extensive intervention work with schools. We then solicited feedback from critical stakeholders on the acceptability, feasibility, design, and anticipated impact of these interventions. Recognizing that few studies have explored the extent to which intervention efforts have permeated the classrooms, cafeterias, and other settings in which secondary and transition services are delivered (e.g., Wei, Wagner, Christiano, Shattuck, & Yu, 2013), we also sought their insights into whether and how individual proposed components were already being implemented in secondary schools. Such information is critical to better understanding the settings in which comprehensive interventions will be introduced.

The purpose of this qualitative study is to explore the contexts, considerations, and complexities associated with delivering interventions to meet the needs of high school students with ASD from the vantage point of practitioners, parents, and other key stakeholders. Specifically, we sought to address three questions: First, how are the transition-related needs of

adolescents with ASD currently being addressed in secondary schools? Second, what considerations and challenges might arise—or are anticipated—when implementing interventions for adolescents with ASD? Third, what professional development, resources, and supports are needed to address the transition-related needs of adolescents with ASD well?

Method

We held 28 focus groups across four states (i.e., North Carolina, Tennessee, Texas, Wisconsin). We selected focus group methodology to gain insight into the perspectives of multiple stakeholder groups on the experiences of high school students with ASD as well as their views of proposed interventions to improve the relevance and impact of secondary and transition education. Focus groups are ideal for identifying key issues and themes in areas where little previous research exists (Fontana & Frey, 2005). Since data are generated through facilitated discussion, focus groups allow for perspectives to emerge in ways not possible through methods focused on individual, rather than group, perspectives (e.g., interviews, surveys). These groups comprised parents of individuals with ASD, young people with ASD, general educators, special educators, administrators, related service providers, and community members. Membership for each focus group was homogenous based on participant roles (e.g., educators, parents) to enhance group efficiency due to shared experiences and to lessen social power issues that could arise between groups. We obtained institutional review board approval at each university.

Participants and Recruitment

We recruited focus group participants purposefully to ensure sufficient representation among key stakeholder groups (Maxwell, 2012). We invited educators, administrators, related service providers, and community members who had experience with high school students with ASD and asked them to speak from the vantage point of their professional role. Recruitment

Table 1. Focus Group Demographics.

Variable	Parents or caregivers	Individuals with ASD	Educators	Administrators	Service provider or community member	All study participants
Focus groups	10	1	9	5	3	28
<i>n</i>	47	6	45	30	24	152
Race or ethnicity ^a						
Black	7	1	7	1	1	17
Hispanic	1	0	2	0	1	4
Multiracial	2	1	5	2	2	12
White	38	4	35	27	19	123
Gender						
Female	45	1	38	27	22	133
Male	2	5	7	3	2	19
Age						
18 or under	0	3	0	0	0	3
19–25	—	1	5	0	2	8
26–40	4	2	22	10	13	51
41–55	35	0	14	12	6	67
56 or over	8	0	4	8	3	23

Note. ASD = autism spectrum disorder.

^aOne participant identified as "other," one preferred not to answer, and one identified as both Hispanic and White.

materials included flyers and e-mails sent to ASD advocacy groups, service providers, schools, and electronic mailing lists for the universities and ASD-specific groups; direct contacts; and flyers placed in community locations. Two sites also used snowball sampling to identify additional potential participants from already enrolled participants.

A total of 152 participants attended the 28 focus groups (see Table 1 for participant demographics). The focus groups varied in size from two to 11 participants (median = 5); the largest stakeholder groups represented across sites were parents and educators (although only six youth with ASD participated in focus groups, we individually interviewed 33 youth and young adults with ASD; findings reported elsewhere in Bottema-Beutel, Mullins, Harvey, Gustafson, & Carter, 2014). In addition to the 47 parent group participants, 11 participants not in parent focus groups (e.g., administrators, educators, service providers) also reported having children with ASD. The average age of their children with ASD was 17.6 years (range 10–29 years).

Focus Group Process

Focus groups were facilitated by 11 university-based personnel who had graduate degrees and extensive experience working with individuals with ASD. Focus group questions were determined in collaboration with members of the broader CSESA project team. To ensure greater consistency in procedures across sites and groups, facilitator training was led by an expert in focus group methodology and included development of the recruitment process, questions, and materials presented to participants as well as discussion of critical skills of effective facilitators.

Although a core set of questions was asked across all focus groups (see Table 2), sites also incorporated questions specific to the CSESA intervention components they were responsible for developing. To ensure coverage of the five CSESA intervention components described earlier, nine focus groups addressed social competence interventions, six addressed academic interventions, seven addressed transition and family interventions, and seven addressed

Table 2. Core Focus Group Questions.

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1. What might be missing from this intervention approach that you think ought to be added? Why?
 2. How might this approach look similar or different for students all along the autism spectrum?
 3. To what extent are the proposed elements already being implemented with students in your schools?
 - a. If they are being implemented: What suggests to you that these strategies are working well? What suggests they are not?
 - b. If they are not being implemented: Why not? What stands in the way?
 4. What potential challenges might arise when trying to implement this approach consistently (i.e., with fidelity) in your school? What steps can we take now to circumvent these potential challenges?
 5. How would implementing this intervention align with other intervention strategies you are already implementing for students with autism?
 6. What training, resources, coaching, and support would school staff need to implement this intervention well? How would that best be delivered?
 7. As we implement this national center, what resources, supports, and information ought we consider developing? How might we best share what we are learning back with you?
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adaptive behavior interventions. (One group addressed two components.) Examples of intervention-specific questions include “Which aspects of the proposed intervention strike you as most and least promising for improving ‘social competence’?” and “How do you see the transition and family component supporting your child or students’ overall educational plan or goals?” All questions were semistructured and open-ended. At all sites, focus groups included a description of the CSESA project and the relevant intervention components. These descriptions were supported by either a PowerPoint presentation or a handout summarizing the CSESA project and the intervention components planned for that location. For the remainder of the time, facilitators provided the group with questions and guided discussion. We provided additional supports (e.g., a visual schedule of the focus group, clip art embedded in PowerPoint to represent key information) to young adults with ASD to facilitate their participation.

Focus group locations varied across sites and included universities, high schools, public libraries, a school district administration building, and a state disability agency. Present at each focus group was a facilitator, a note taker, and at least one additional person to handle logistics and recording. Participants introduced themselves using pseudonyms and provided information on their experiences related to ASD. Facilitators took notes, as described in the facilitator training

(e.g., use the words of the participant rather than paraphrase, use short quotes), or summarized discussions for focus group members. Participants were encouraged to dispute facilitators’ summarized interpretations, clarify their own thoughts, and expand on a presented idea. Sessions varied in length from approximately 1 to 2 hr ($M = 93$ min). We provided light snacks and some sites provided stipends (i.e., \$25–\$60). All focus groups were audio recorded, and one site video recorded. Summaries of the key focus group findings were subsequently shared with participants.

Data Analysis

We adopted a multistep, team-based approach to analyze data collected across the 28 focus groups. Our coding team included eight members working across three universities. We revisited and refined our initial research questions (described previously) as a team after all focus groups were completed but before launching the coding process. We adopted these research questions to directly inform the design and delivery of a comprehensive intervention package as well as to suggest salient directions for other researchers undertaking intervention efforts focused on the transition and secondary education of students with ASD.

After deidentifying all transcripts and preparing our documents for analyses within

NVivo10 (2012), coding proceeded using a constant comparative approach (Lincoln & Guba, 1985). We established three pairs of coders who each assumed lead responsibility for coding all transcripts in light of one of our three research questions. We first selected five transcripts from focus groups involving different stakeholder groups and addressing different transition domains. Each coding pair examined these same five data sources to form and define initial categories for analysis (e.g., “positive indicators,” “negative indicators,” “training for whom,” “barriers to training”). Segments of each transcript—ranging from a single sentence to several paragraphs—were coded and tentatively categorized. Within each pair, team members independently generated categories and then met together to compare, collapse, or refine their codes through discussion and revisiting the transcripts. After developing an initial coding framework and associated definitions for each question, the pairs shared their emerging findings with the entire team for critical feedback and alternative considerations. Once revisions were made to the initial coding frameworks (e.g., greater definition, and thus differentiation, was given to codes related to implementation and professional development), the pairs continued their analyses by individually examining half of all remaining focus group transcripts. The process of comparing and combining categories again occurred within pairs for each question, and feedback was subsequently provided by the entire coding team. After additional revisions were made (e.g., reorganizing themes, clarifying definitions, collapsing categories)—some of which were substantial—the pairs completed independent coding of all remaining transcripts and again met to come to consensus. Feedback on each pair’s work was again provided by the entire coding team, and all transcripts were re-reviewed against the final coding framework.

In addition to identifying and defining themes aligned with each of our research questions, we also analyzed the extent to which references supporting these codes

appeared across stakeholder groups (i.e., educators, administrators, parents, youth with ASD, service providers, community members) and transition domains (i.e., social competence, academics, transition planning and families, adaptive behavior). Although counts of data falling under individual categories do not always correspond to the attention and weight given to each by participants, we were interested in gauging the degree to which key issues were raised within and across groups (see Tables 3 to 5). These frequencies helped us detect patterns, discern issues emphasized by participants, and collapse codes, but we interpreted participants’ meanings by grounding data in context rather than by relying exclusively on those counts (Huberman & Miles, 1994). Thus, Tables 3 through 5 display the number of references to each code, the number of different focus groups in which each code was raised, the number of times each code was raised in relation to our four intervention components, and the number of times each code was raised by each group.

Involving participants with a range of perspectives, experiences, and geographic locales provided multiple opportunities to triangulate our research findings within and across focus groups.

As described earlier, we took care to ensure our analyses were both rigorous and reflective by attending to quality indicators (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005; Maxwell, 2012). Involving participants with a range of perspectives, experiences, and geographic locales provided multiple opportunities to triangulate our research findings within and across focus groups (Creswell, 2007). Peer debriefing was undertaken at multiple points throughout the coding process to offer additional critique of assumptions and conclusions. In addition, we presented our initial findings to 152 stakeholders at a national autism conference and solicited their feedback.

Table 3. Coding by Components and Stakeholders for Research Question 1.

Theme	Total references	Total references by CSESA component					Total references by stakeholder group				
		Different groups	AC	TF	AB	SC	Y	F	E	A	SC
Extent of meeting needs	16	8	3	6	2	7	0	9	6	1	0
Positive indicators											
Negative indicators											
Not addressed at all	54	15	12	15	5	23	2	33	16	0	3
Not addressed effectively	49	17	5	18	12	14	0	28	13	2	6
Inconsistently within schools	19	12	4	2	5	8	0	8	3	5	3
Not prioritized	17	11	6	4	0	7	0	8	8	0	1
No longer addressed	16	10	2	1	1	12	0	9	3	0	4
Inconsistently across schools	10	8	1	3	2	4	0	4	5	0	1
Not addressed early enough	7	5	0	4	2	1	0	5	2	0	0
Inconsistently across students	4	4	1	1	1	1	0	1	2	0	1
Providers of services and supports											
Peers	42	13	0	0	8	34	2	10	16	3	11
General educators	36	15	11	3	14	8	3	17	11	5	0
Family members	19	11	2	4	4	9	0	15	2	1	1
Special educators	17	11	2	2	9	4	0	3	9	3	2
Specialists outside of school	17	11	0	5	5	7	0	10	5	2	0
Administrators	9	7	1	0	3	5	1	2	5	1	0
Adult services	9	5	0	6	3	0	0	1	7	1	0
Counselors	8	6	0	1	5	2	2	1	2	2	1
Job coaches	6	4	0	4	1	1	0	1	5	0	0
Related service providers	6	5	1	1	3	1	0	2	1	2	1
Paraprofessionals	3	2	1	0	0	2	0	1	0	0	2
Adults (nonspecific)	12	8	1	3	4	4	3	2	4	0	3
Other personnel	8	6	2	1	1	4	0	6	1	1	0

(continued)

Table 3. (continued)

Theme	Total references			Total references by CSESA component				Total references by stakeholder group				
	groups	Different		AC	TF	AB	SC	Y	F	E	A	SC
Avenues of services	65	27		7	12	20	26	2	15	28	7	13
Formal programs	35	12		20	1	11	3	2	13	15	5	0
Accommodations	26	14		0	13	7	6	0	11	9	5	1
IEP and planning	22	11		6	2	11	3	0	5	13	3	1
Individualized interventions	18	9		1	0	7	10	6	5	4	1	2
Incidentally addressed	17	9		0	10	6	1	0	2	9	5	1
Information sharing	13	9		0	1	5	7	0	4	6	1	2
Group interventions	12	7		0	9	2	1	0	7	4	1	0
Community-based instruction	8	6		1	4	2	1	2	5	0	1	0
Generic supports	6	5		3	1	1	1	0	2	3	1	0
Academic support	4	2		0	2	2	0	0	0	2	2	0
Collaboration with external sources	3	3		0	2	1	0	0	1	2	0	0
Assessments	2	2		1	0	1	0	0	0	1	1	0
Embedded in general curriculum	1	1		0	0	0	1	0	0	0	0	1
Schoolwide educational efforts	15	5		6	1	0	8	0	8	0	6	1

Note. CSESA = Center on Secondary Education for Students With Autism Spectrum Disorder; AC = academics; TF = transition and families; AB = adaptive behavior; SC = social competence; Y = youth with autism spectrum disorder; F = families; E = educators; A = administrators; SC = service providers or community members; IEP = individualized education program.

Findings: Research Question 1

Stakeholders addressed (a) the extent to which needs of adolescents with ASD were addressed in secondary schools and (b) the specific avenues through which this occurred.

Extent to Which Schools Are Addressing the Needs of Youth With ASD

Stakeholders offered myriad positive and negative descriptions of the extent to which secondary schools were meeting the needs of adolescents with ASD (see Table 3).

Positive Indicators. Of the 192 references we coded related to this question, just 16 reflected a view that the efforts of schools were effective, relevant, or produced positive student outcomes. One parent stated, “We are clearly having an entirely different experience. Ours is sort of beyond wonderful. . . . They’re definitely hitting on these goals, at least with my child.” Although some positive mention was made related to all four intervention components, much variability existed across stakeholder groups, with parents highlighting successful efforts of schools more often than other groups.

Negative Indicators. The overwhelming message of these stakeholders was that schools were inadequately addressing the educational needs of students with ASD (176 references; see Table 3). Some participants indicated no efforts were being made to address specific components, whereas others lamented the general ineffectiveness of existing programming.

Nonexistent efforts. Numerous references were made to the overall absence of efforts within high schools to meet particular needs of adolescents with ASD. In some groups, high school was said to mark the point at which attention to these issues ceased, whereas others intimated such an emphasis had never truly been part of educational services. As noted by

an educator and a parent, respectively, “I’m seeing a whole lot of that [social skills] falling to the wayside come middle school and then high school,” and “The school that we go to now is a completely neurotypical school. To my knowledge, it doesn’t have any programs for kids on the spectrum. So, we’re in cold turkey.”

The overwhelming message of these stakeholders was that schools were inadequately addressing the educational needs of students with ASD.

Ineffective efforts. A pervasive view across component areas and stakeholder groups was that existing efforts were ineffective. Multiple reasons were proffered. First, other educational demands were said to receive precedence over efforts to meet the needs of students with ASD. For example, pressure to promote academic achievement trumped an emphasis on social needs, and overwhelming paperwork left little time for instruction. One educator shared,

I think teachers have so many things on them and so many benchmarks that they have to meet that sometimes, that [social success] is not a priority at the high school. It’s more the academics and getting them through and getting their credits.

Second, limited resources were cited as sometimes preventing particular needs from being fully addressed. In some cases, fiscal resources were constrained. Other times, the paucity of staff and the lack of training made it difficult to deliver needed interventions. The comments of one parent illustrated this point: “The education system is so far behind and underfunded. He only got speech for 15 minutes, once a month. That’s because there aren’t enough therapists to go around. And that all goes back to the money.”

Third, some stakeholders voiced concerns about the consistency with which needed services and interventions were provided to

students with ASD. The phrase “it depends on . . .” captures a recurring sentiment. Some participants ($n = 4$) felt the quality of services depended on the disability severity of students, noting a lack of consistency in what students across the spectrum received. A larger number of comments ($n = 19$) focused on inconsistencies observed within schools based on which teacher, class, or program a student accessed. For example, a parent observed, “It is very person dependent. Sometimes we had teachers who would help us around the system that were not very friendly.” Other comments ($n = 10$) highlighted school-to-school variability, suggesting differences in educational services had more to do with where a student attended rather than his or her individualized needs. One service provider reflected,

If you're lucky, there's at least one person in a school that's willing to address that [needs of adolescents with ASD]. You can go to School A at this end of the road and School B at this end of the road, and you have completely different views about what autism and what goes with it looks like.

Avenues Through Which Schools Are Addressing the Needs of Youth With ASD

Despite expressing overall disappointment with the responsiveness of schools to the needs of adolescents with ASD, these stakeholders did share specific avenues through which needs were being addressed. We highlight findings about (a) who is said involved in addressing these needs and (b) the particular pathways through which services and supports are delivered.

Providers of Services and Supports. The breadth of individuals identified as being involved in the addressing the comprehensive needs of students with ASD was striking (see Table 3). These individuals were sometimes described as being part of an overarching team, as suggested by one educator: “It’s a team effort, tapping into these connections. We have to tap into the connections

the parents have, everybody.” Most often, individuals were mentioned in isolation of one another. The prominent mention of peers was especially intriguing, although this was primarily limited to discussion of the social competence and adaptive behavior components.

Similarly, general educators were often mentioned as critical and prominent players in the education of students with ASD, raising important considerations about how best to equip these staff to meet the diverse needs of students in their classrooms. Perhaps most surprising to us was the limited mention of the involvement of paraprofessionals. Despite the prominent role they play in the education of adolescents with severe disabilities, paraprofessionals were explicitly mentioned only three times. One teacher noted, “I see a lot of adults providing the supports, especially paraprofessionals who are prompting conversations with both typical students as well as students with disabilities.”

Avenues of Service and Support Provision. Participants identified myriad ways in which the needs of students with ASD were addressed (see Table 3). A variety of structured or formal programs were the most commonly mentioned avenues. These included peer-mediated programs (e.g., peer supports, peer buddy groups), formal seminars, and other orientation events. For example, one parent highlighted the benefits of a program in which his child was involved:

They're doing freshman seminar at the school that my son goes to. And what they're teaching are life skills in freshman seminar. That freshman year was very enlightening and comforting for me because it also helped him transition for that first year, because your world is just rocked when you first step foot on that high school campus. And his was. And so, they do a lot to kind of support the kids and make sure that they get to their classes and have everything that they need.

The provision of individualized accommodations and interventions, including the individualized education program (IEP), were also mentioned often. For example, self-monitoring checklists, specific seating arrangements, and

other self-management strategies were all cited by participants. An administrator noted, “Some students have FBAs [functional behavior assessments] and BIPs [behavior intervention plans]. We’re doing a lot of Google docs for collecting data and monitoring behavior now across settings with the teachers. That’s been very helpful.” Similarly, many respondents addressed planning meetings as the context through which students’ needs were met. A special educator highlighted, “An IEP team meeting—that’s where all of this has to come down to. It’s a lot of work . . . but the end result is that the student is supported in the co-teaching and in the school setting.”

Findings: Research Question 2

We asked focus groups about the considerations and challenges that arise—or are anticipated—when implementing interventions for adolescents with ASD. Stakeholders raised several issues associated with the proposed implementation of the four proposed intervention components (see Table 4). We defined considerations and challenges as potential obstacles to implementation of interventions for adolescents with ASD. These obstacles originated from three distinct sources: (a) agency authorities (i.e., prominent school or

district, state, and federal leaders or administrators in positions responsible for interpreting and executing policies and procedures as well as for allocating funding and making funding decisions regarding resources, personnel, and services), (b) environmental contexts (i.e., the settings and conditions under which interventions are implemented), and (c) curricular priorities (i.e., decisions regarding skills and instructional priorities identified to maximize student potential). For example, challenges stemming from persons of authority include adopting “all-or-nothing” service models across disabilities as well as achievement standards. In terms of environmental contexts, issues included the inconsistency of teacher and support staff skills and knowledge across education settings and content areas. Finally, in relation to curricular priorities (i.e., decisions regarding skills and instructional priorities), impediments included addressing core symptoms of ASD (e.g., social interaction and communication skills) while failing to address academics or focusing solely on academics while neglecting behavior and communication. However, most prominent were concerns related to implementation and sustainability, including (a) the feasibility of intervention efforts and (b) the challenges related to the heterogeneity of students with ASD. Each is elaborated on next.

Table 4. Coding by Components and Stakeholders for Research Question 2.

Theme	Total references	Different groups	Total references by CSESA component				Total references by stakeholder group				
			AC	TF	AB	SC	Y	F	E	A	SC
Feasibility	430	40	77	92	152	107	0	75	274	47	20
Autism variability	220	28	47	34	38	90	1	89	90	19	11
Agency	109	23	6	33	32	29	3	60	26	15	5
Environmental context	100	24	16	15	32	37	7	33	39	14	7
Curriculum priorities	82	19	16	8	39	17	15	13	38	12	4

Note. CSESA = Center on Secondary Education for Students With Autism Spectrum Disorder; AC = academics; TF = transition and families; AB = adaptive behavior; SC = social competence; Y = youth with autism spectrum disorder; F = families; E = educators; A = administrators; SC = service providers or community members.

Feasibility of Implementation

Overall, concern about the feasibility of the proposed interventions was high. Specifically, the viability of the components being carried out as prescribed without much difficulty was raised more than 400 times, particularly in relation to the adaptive behavior component and by educators. Participants acknowledged feasibility would be influenced by the skill level and willingness of professionals to provide interventions as designed within the confines of available time and resources. One service provider lamented, "There is always a challenge with school staff because they are already short [staffed] and over-worked basically."

A special educator expressed her concern, saying, "I have to make a choice about how much effort I put into ensuring it's implemented with fidelity."

"Buy-in" of the interventions and the additional time, effort, and alteration of educational plans in place were also noted as obstacles to feasibility, especially if educators are skeptical about the likelihood of achieving improved student outcomes. A special educator expressed her concern, saying, "I have to make a choice about how much effort I put into ensuring it's implemented with fidelity. I have to know if I do it as directed, I'm more likely to get results." Parents worried that any success would be limited if educators and administrators did not commit fully to proposed interventions. As one parent noted, "People don't understand well enough to buy in, or maybe they are not certain that it would even be a successful thing to do. I could see that being something that might hinder them [school personnel] from helping it work."

Interestingly, participating educators and both school- and district-level administrators also worried about feasibility being affected negatively by limited parent buy-in. A behavioral specialist expressed the importance of parent support, claiming, "Parent buy-in can

often lead to everyone else giving buy-in in our system." Not surprisingly, parents wanted interventions with functional applications that made sense to them. For example, an educator shared why one parent was not in favor of academic intervention: "You are trying to get my kids to read *Grapes of Wrath* when they don't know how to brush their teeth."

Variability of Autism

The challenges related to designing interventions to address the wide-ranging needs of students with ASD were frequently raised, particularly in relation to the social competence component as well as by many educators and parents. For example, a classroom teacher wondered how professionals would select the right intervention and level of support:

I guess part of it is going to be depending on where they're [students with ASD] at on the spectrum and how much support they need. Some students might need lots of support and one-on-one teaching and on-going practice where some might pick it up after one or two times.

A parent of a child with ASD summed up the main difficulty in designing and planning interventions that target high school students with ASD, saying, "Our kids, they're all over the place." Another added,

These individuals that are classified as ASD . . . it really is a huge spectrum. And that to me is the most troubling aspect. What you are trying to tackle here—you have folks that are extremely bright—some that would not be classified, maybe your low IQ—you just have a huge gamut of issues that you're trying to deal with.

There was strong consensus that the varied profile of individuals with ASD will require interventions components to be tailored to individuals. They further expressed fear in a "one-size-fits-all" approach to implementation. One service provider highlighted why a range of needs must be addressed: "The college-bound student is not going to be working on the same things as a student that is non-verbal and had an IQ of 30."

Table 5. Coding by Components and Stakeholders for Research Question 3.

Theme	Total references	Different groups	Total references by CSESA component				Total references by stakeholder group				
			AC	TF	AB	SC	Y	F	E	A	SC
Training topics											
Autism	109	19	9	16	13	68	0	55	20	4	19
Individual intervention components	77	21	7	17	13	38	0	25	22	14	13
Evidence-based practices	16	11	2	5	5	5	0	6	6	1	2
Other	53	15	3	16	14	19	0	6	6	0	2
Training for whom											
General educators	70	20	10	8	20	28	1	26	21	7	8
Peers	58	11	2	2	2	48	0	22	13	0	17
Special educators and related services	54	6	3	8	16	23	1	22	12	3	9
Parents	53	17	6	30	4	14	0	17	12	21	1
Whole school	42	11	5	5	5	31	0	17	14	0	8
Students with ASD	32	14	4	10	7	14	0	13	7	6	5
Administrators	16	10	3	3	2	10	0	4	7	0	4
Community members	12	6	0	0	0	12	0	8	2	0	2
Employers	5	3	1	4	0	1	0	4	1	0	0
Others	19	8	1	2	2	15	0	10	4	0	5
Barriers to and supports for training											0
Investment in or support of training	23	13	5	8	3	8	0	6	10	5	2
Resistance	18	10	0	7	2	7	0	9	5	1	1
Overwhelmed by other commitments	14	7	1	7	1	5	0	4	3	7	0
Administrative support	11	8	1	0	2	7	0	2	7	0	1
Lack of knowledge	11	8	1	3	5	3	0	6	4	1	0
PD and training incentives	9	4	0	4	0	4	0	6	0	2	0
Individualized needs	8	2	0	7	0	1	0	0	0	7	1
“Things that are hard to teach”	7	7	0	2	3	2	1	2	2	1	1
Lack of training opportunity	6	6	1	2	2	1	0	2	3	1	0

Note. CSESA = Center on Secondary Education for Students With Autism Spectrum Disorder; AC = academics; TF = transition and families; AB = adaptive behavior; SC = social competence; Y = youth with autism spectrum disorder; F = families; E = educators; A = administrators; SC = service providers or community members; ASD = autism spectrum disorder; PD = professional development.

Stakeholders also indicated that how adolescents view their autism and its impact may impede the success of certain interventions. One educator noted, “I think you might have a harder time convincing kids with Asperger that they have social deficits that they are willing to work on versus kids who might be a little bit more aware of where their deficits are.” Ana, a high school student with ASD, shared,

When I was a sophomore, I was put with kids who have ADHD [attention deficit hyperactivity disorder] and stuff, which for me made me feel like I was retarded. Because I was put with other kids with disabilities and I’m like what is this . . . a classroom or an institution?

Moreover, a mother suggested that her son had enough issues being a high school student and would not want any part of an intervention that singles him out to peers who could be less than kind or not accepting of differences. Another parent further asserted apprehensions over his son’s right to privacy in concealing his ASD:

Speaking for my own son, and I know that there are other people with autism like this in high school, I mean, he doesn’t want anyone to know. He still doesn’t. He’s 20. He doesn’t want anyone to know he has autism. He would be mortified if he thought that the teacher was telling other kids and trying to train them to help him as a person with autism.

Findings: Research Question 3

We asked all stakeholders (with the exception of youth) to share their perspectives on what training, resources, coaching, and other professional development support high schools would need to implement the various interventions. Although a number of issues were raised (see Table 5), we highlight themes related to (a) broad professional development needs related to general awareness about ASD and needs of students across the spectrum, (b) professional development specifically for general educators, and (c) concerns about delivering this training.

Awareness of Autism Across Stakeholders

Collectively, stakeholders expressed a strong need for developing knowledge related to autism, the individual interventions that would make up the CSESA package, general evidence-based practices, and other topics (e.g., sexuality, relationships, independence, self-management, available services for adolescents with ASD). Although all groups were asked direct questions by facilitators about training and professional development needs related to the individual components planned for their site, the groups also expanded on the critical need for professional development and training to increase awareness about ASD and the needs of students across the spectrum. This need for awareness of ASD was discussed across all component-specific focus groups. Stakeholders described the difficulties faced by students when school staff, peers, and others hold assumptions of ASD based on their personal experiences or limited information. They described challenges resulting when assumptions did not align with actual needs.

Overall, parents felt teachers understood the needs of some students with ASD but not others (e.g., with or without severe disabilities). Some parents described the incongruity between teachers’ expectations and their child’s inability to meet those expectations. One parent shared,

I think that for my son in particular, there was always a disconnect with his IQ and his other deficits that he had. The teachers, even though they knew his diagnosis, would see him as more capable than he actually was, or that they would see him as lazy, or stubborn, or whatever.

Another parent shared, “My son is on the Aspie [Asperger’s syndrome] side, so he’s high-functioning intelligent. They get the intelligence mixed up with the Asperger’s, and they don’t understand. ‘If you are so smart, why can’t you understand this?’” Educators often echoed the concerns of parents, recognizing gaps in the knowledge of other school members which they perceived would negatively

affect their school's ability to meet students' needs. One special educator reflected,

We really have to be strong advocates because of the ignorance about autism. Even with our administration sometimes—they don't know a lot about autism or they have misconceptions or they don't understand the spectrum or they think because it's a higher functioning student that they don't have a lot of needs that a lower functioning student might have that's more obvious.

A majority of focus groups raised the need for schoolwide autism awareness training. This need specifically included peers who do not have ASD. One service provider encapsulated the need for other high school students to better understand ASD in saying,

There has to be training for the typical students or the regular education peers because now there's bullying with everything, even with students that look different, but especially with someone (with) autism, people don't always know. I mean they don't stand out, they don't look different . . . so students may not be sensitive to reading how to adapt their behavior. It's an invisible disability.

Professional Development and Training Related to Autism for General Educators

Although the need for autism awareness emerged as an issue for all of those who interact with and educate high school students with ASD, it was considered most critical for general educators.

Many special educators felt the limited knowledge of ASD held by general educators affected their ability to collaborate on implementing interventions for students with ASD. One special educator shared her sister's experience:

My sister's a regular education teacher and she'll get these IEPs and have all these goals and modifications she needs to do and these combinations. She doesn't know if the kid is

learning disabled, if they have autism, if they have intellectual disability . . . so she has a lack of knowledge across the board. She doesn't know how to address his need, just what the goals are.

As described earlier, parents noted a disconnect between their child's behavior, learning difficulties, social issues, and teachers' ability to recognize these as challenges related to the child's ASD and address them accordingly. One parent described her role in educating teachers:

I think most regular ed [education] teachers have a very limited knowledge of autism in general. I think it's going to be very different for the self-contained classrooms, the [vocational instruction] teachers . . . anything that my kid's teachers knew, it was because of me. We bugged them, bugged them, and bugged them.

Parents and educators described their confusion in understanding the role of general educators in relation to students on the spectrum. One parent shared her frustration:

The only time I heard from the school was when something happened. I think there is a lot of mainstream teachers passing it off on "that is on the special education teacher to figure out, sort through, deal with" and when he is in the classroom, he is a mainstream kid and we do not have to recognize or deal with the autism. If he has a problem, we will send him out of the classroom.

An educator echoed this frustration when asked how best to communicate professional development expectations across school professionals:

. . . thinking about high school content teachers who are not going to assume that it's their responsibility to go through modules about how to teach . . . even though we would hope they would want to do everything they can, in reality, it's not clear it's their job.

Data across stakeholders revealed that the need for understanding of ASD and interventions specific to ASD was particularly great

for general educators, and addressing this need could have a particularly positive impact on the experiences of students with ASD. Additionally, confusion existed about the roles and responsibilities of all educators specific to students with ASD.

Barriers to Professional Development and Training

We asked focus group participants to consider the potential challenges to implementation of the individual intervention components we were planning as well as interventions for students on the spectrum in general. Across stakeholder groups, issues were raised related to resistance from teachers; difficulty in getting “buy-in” from school staff, peers, parents, and adolescents with ASD; the importance of administrator support; the importance of incentives for time spent learning to implement new interventions and encouraging parent participation; lack of foundational knowledge about teaching students with disabilities; current learning opportunities; and the idea that there is simply “too much” to do. *Too much* also described those situations when schools and educators feel torn between various mandated priorities or those to which they have chosen to attend to in their work. One educator summarized this concern well:

I’m thinking about even with autism training in general, teachers have a lot. They have the whole staff. They have so many things. Yes, they do have students with autism, but they have students with a lot of disabilities, and they have students with ESL [English as a second language]. They have a lot. You have to be careful about how much you expect, and I know that we want teachers to be trained, all staff to be trained. I guess, that for some, it’s going to be more the awareness, and if they’re working with these students, maybe it’s going to be more specific training.

Additionally, parents, another group with “too much” on their plates, were identified as having limited buy-in to training absent an immediate concern. A parent validated this concern:

I think getting parents to come is also a problem. I have been involved in things where we try to get parents to come to trainings and things and they don’t come. Trying to get people in. They don’t come until they realize, “Oh my gosh, wait!”

Related to this issue of “too much,” focus group participants expressed an overall concern about gaining buy-in and combating resistance for professional development and training that is targeted to meet the needs of a relatively small percentage of the school population. Groups suggested gaining buy-in through direct compensation, giving certifications to participating educators, being creative in finding opportunities for parents to participate, and illustrating to educators and administrators how resources and knowledge would positively affect all students.

Existing intervention efforts were described as ineffective or inconsistent, and there was general consensus that suitable programs and transition services were few and far between.

Discussion

Despite the persistence of dismal outcomes for young people with ASD, limited attention has focused on considerations related to the design and delivery of intervention efforts in high school for these young people. Several themes received particular prominence across these 28 focus group conversations. First, participants felt strongly that secondary schools were insufficiently addressing the educational needs of adolescents with ASD. Existing intervention efforts were described as ineffective or inconsistent, and there was general consensus that suitable programs and transition services were few and far between.

Second, stakeholders affirmed the importance of (and challenges with) ensuring interventions are both feasible to implement and responsive to the diversity of educational needs among students with ASD. Third, stakeholders advocated for undertaking concerted

efforts to promote greater awareness of and knowledge about ASD for all stakeholders, including general educators. At the same time, they acknowledged myriad barriers to effective professional development (e.g., competing professional demands; limited time, funds, and buy-in; pressures to address standards). Although knowledge of effective interventions for adolescents with ASD is emerging, the ability to support translation into day-to-day practice continues to lag (Greenwood & Abbott, 2001).

Stakeholders consistently expressed strong concern that a “one-size-fits-all-students-with-autism” approach to intervention was fraught with limitations.

Collectively, these findings highlight several critical needs at the intersection of research and practice. First, concerted and coordinated intervention efforts are sorely needed within secondary schools. Across all focus groups, stakeholders lamented the absence of compelling educational and transition programming aimed at meeting the diverse needs of high school students with ASD. Although myriad factors may contribute to this perceived landscape, two issues warrant further attention. One is the lack of intervention practices rigorously evaluated at the high school level. Almost every systematic literature review addressing students with ASD illustrates the limited attention given to youth and young adults in high schools (e.g., Carter et al., 2010; El Zein et al., 2013). Educators currently lack a strong, research-based foundation upon which to guide their intervention decisions.

Second, efforts to implement comprehensive intervention efforts at the high school level require careful consideration of how best to integrate the perspectives and practices of numerous stakeholders. The sheer number of different individuals whose involvement (or support) is needed to address sufficiently each intervention component across multiple settings was described as daunting. Although this

concern is not altogether different from providing services to students served under other special education categories, it does reinforce the importance of efforts aimed at ensuring all of these stakeholders are equipped with the commitment, skills, and strategies needed to be involved effectively in intervention efforts. Moreover, it raises questions about how best to identify venues that enable these professionals to plan collaboratively. Identifying effective pathways for professionals to work together in tractable, but effective, ways is an enduring issue in need of resolution.

Third, it is essential that interventions be tailored to address the diverse and individualized needs of students across the entire spectrum. Stakeholders consistently expressed strong concern that a “onesize-fits-all-students-with-autism” approach to intervention was fraught with limitations.

Although individualization is a hallmark of all of special education, the diversity of students served under the ASD category seems to be especially wide. To meaningfully align interventions with the needs of individual students, educators need access to high-quality assessments and effective planning processes. Additional work is needed to identify practical avenues for determining which evidence-based interventions are most appropriate for which students when seeking to improve specific outcomes. Such efforts, however, must be accompanied by research focused on understanding individual differences and exploring the boundaries of specific intervention practices.

Fourth, strong professional development, training, and resources must be delivered in creative and compelling ways to ensure practitioners are well prepared to meet the educational and transition needs of high school students with ASD. Studies indicate educators report having limited opportunities to acquire information about the implementation of evidence-based practices with their students and may feel poorly equipped to adopt promising interventions (e.g., Brock, Huber, Carter, Juarez, & Warren, 2014; Scheuermann, Weber, Boutot, & Goodwin, 2003). High-quality professional development is needed in both

preservice and in-service contexts (Barnhill, Sumutka, Polloway, & Lee, 2014; Morrier, Hess, & Heflin, 2011). Such efforts must extend beyond single-day workshops and one-shot trainings that have little lasting impact on the frequency and quality of intervention implementation (Knight, 2007). Indeed, without follow-up feedback and support, implementation of newly acquired skills and knowledge rarely transfers to the classroom and sustainability suffers. Coaching models—used widely in elementary schools—warrant additional exploration at the secondary level (Lang & Fox, 2003). However, additional research is needed to examine the viability and impact of these approaches in relation to implementing comprehensive intervention models.

Fifth, targeted professional development should also be accompanied by broader efforts to ensure a basic awareness and understanding of ASD permeates secondary schools. Stakeholders repeatedly called for schools to undertake efforts to enhance attitudes toward and knowledge about ASD for everyone in a school but particularly for general educators. Although numerous studies have examined avenues for improving attitudes and awareness of various disabilities (e.g., Scior, 2011; Segall & Campbell, 2012; Sharma, Forlin, & Loreman, 2008), research is inconclusive on the most effective approaches for undertaking these efforts.

Because most schools have shifted away from categorical service delivery, future studies should explore the extent to which the needs of students served under the autism category converge and diverge from those served under other disability categories.

Limitations and Future Research

Several limitations to this study suggest directions for future research. First, our efforts to solicit the views of stakeholders were not accompanied by direct observations of their classrooms and schools. Although our

primary purpose was to understand critical contextual factors from the vantage point of professionals, parents, and others, we are unable to confirm their characterizations about the degree to which transition-related needs of adolescents were being addressed in secondary schools. Future descriptive studies should explore in greater depth the nature and quality of service delivery in secondary schools to identify practice variations within and across schools. Second, although we selected participants on the basis of having sufficient experience and expertise to offer perspective on particular intervention components, it is unlikely any had direct experience implementing a comprehensive intervention model. Although these participants could confidently speak to the possibilities and pitfalls associated with implementing high school interventions, it is likely other issues will emerge from stakeholders directly involved in implementing the full CSESA model. Because most schools have shifted away from categorical service delivery, future studies should explore the extent to which the needs of students served under the autism category converge and diverge from those served under other disability categories.

Third, the voice of youth and young adults with disabilities is not prominent within these focus group findings. Recognizing the potential challenges of implementing focus groups with adolescents in general, and adolescents with ASD in particular, we opted to conduct individual interviews using multiple formats (i.e., in person, telephone interviews, written interviews, and instant messaging) to solicit their views on the acceptability of some intervention approaches (reported in Bottema-Beutel et al., 2014). We encourage additional pursuit of methodologies that enable young people with ASD to have a meaningful voice in interventions designed to address their needs, including educational interventions (cf., Kramer, Olsen, Mermelstein, Balcels, & Liljenquist, 2012; Powers et al., 2007). Fourth, our narrow focus on the intervention needs of adolescents with ASD within these focus groups makes it impossible for us to determine from our data whether the core concerns

and considerations raised by stakeholders are really just reflective of the challenges of designing effective secondary programming for students with *any* disabilities (and even students without disabilities). Although the most prominent themes were specifically anchored to the needs of students with ASD, others were just as relevant to students with other disabilities. Because most schools have shifted away from categorical service delivery, future studies should explore the extent to which the needs of students served under the autism category converge and diverge from those served under other disability categories.

Implications for the Implementation of Comprehensive Treatment Models

We designed this qualitative study as just one strand of our efforts to inform the development and refinement of a comprehensive intervention package aimed at addressing the transition-related needs of high school students with autism. We took seriously both the general and targeted recommendations of these stakeholders. For example, we revised our adaptive behavior component to be more responsive to calls to use technology to support the planning and implementation process. We revised our planned orientation sessions for peer-mediated interventions based on recommendations to give greater input from youth with ASD and to address disclosure issues. We adapted our family and transition component to more fully incorporate community development and career-related supports based on recommendations to educate community members about the characteristics and needs of people with ASD. And we revised our academic interventions by standardizing the lesson format, adding a priming technique and a self-monitoring checklist, and changing text type. These perspectives—coupled with pilot data collected the same year—offered critical input when refining our initial plans to ensure they were effective for students, acceptable to stakeholders, and feasible to implement. We plan to continue capturing and drawing upon stakeholder feedback

throughout our research cycle to inform policy and practice decisions related to the adoption of comprehensive interventions. We recommend other research teams consider similar efforts when undertaking new intervention efforts in areas in which little is known and few studies are available.

The perspectives of these 152 stakeholders further reinforce both the importance—and challenges—of integrating multiple intervention efforts in schools within comprehensive intervention models. In the remaining years of this project, we will be implementing and evaluating a comprehensive model that addresses all five intervention areas concurrently, each area having been refined and strengthened based on lessons learned from both our stakeholder interviews and pilot efforts (see Odom et al., 2014, for a deeper description of the model). For secondary schools wanting to integrate these approaches into their own program efforts, several considerations are important to consider. First, stakeholder input and buy-in is essential to ensuring both feasibility, fit, and fidelity given available resources and structures. Second, a clear description of and vision for a comprehensive transition program must be carefully crafted and communicated with all school staff. Third, secondary schools are likely to need considerable coaching (likely from external sources) to shift to a more coordinated and comprehensive model of service delivery. Fourth, such changes will require both a catalyst and considerable time to permeate any single high school. Finally, effective and sustained implementation necessitates ongoing reflection on both the process and outcomes associated with model implementation. However, we are convinced such efforts hold particular promise for elevating the in-school and postschool outcomes of adolescents with ASD.

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